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EXAMINER

RICHER, AARON M

| ART UNIT | PAPER NUMBER |
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2628

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1 and 14 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "displaying said output pixel sample", which is a method step. However, claim 1 also recites a "system" in the preamble and various parts of an apparatus in the body of the claim. It is unclear if claim 1 is claiming a method or a system, and therefore the metes and bounds of the claim cannot be determined.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1, 2, 6, 10-15, 19, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alcorn (U.S. Patent 5,012,163) in view of Naegle (U.S. Publication 2001/0033287).

7. As to claims 1 and 14, Alcorn discloses a system for performing transform operations comprising:

- a first conversion block for receiving a pixel sample and for converting said pixel sample from a gamma space to a linear space (fig. 1, element 40; col. 4, lines 29-47);

- a transform function block coupled to said first conversion block for transforming said pixel sample into an output pixel sample (fig. 1, elements 60 and 70; col. 4, lines 48-68; linear data is combined with the data that has just been converted to linear space, this reads on a transform);

- a second conversion block coupled to said transform function block for converting said output pixel sample from said linear space to said gamma space (fig. 1, element 80; col. 4, line 65-col. 5, line 15)

- and displaying said output pixel sample (fig. 1, element 100).

Alcorn does not disclose that the pixel sample converted is one of a plurality taken from a single pixel. Naegle, however discloses a multisampling system (p. 19,

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section 0221) in which a sample is converted from gamma space to linear space and gamma-corrected again (p. 19-20, section 0222). The motivation for using multisampling is to obtain a more realistic image (p. 2, section 0015). It would have been obvious to one skilled in the art to modify Alcorn to multisample in order to obtain a more realistic image as taught by Naegle.

8. As to claims 2 and 15, Alcorn discloses a system wherein said first conversion block comprises a degamma filter (fig. 1, element 40; col. 4, lines 29-47).

9. As to claims 6 and 19, Alcorn discloses a system wherein said second conversion block is a gamma correction filter (fig. 1, element 80; col. 4, line 65-col. 5, line 15).

10. As to claims 10 and 23, Alcorn discloses a system wherein a transform function block is an antialiasing filter (col. 2, line 53-col. 3, line 8; an antialiasing filter is given as a clear reason for conversion to linear values).

11. As to claims 11 and 24, Alcorn does not disclose a system wherein said antialiasing filter is implemented as a sum and divide operation. Naegle, however, discloses an antialiasing method combined with gamma correction that averages a pixel neighborhood i.e. sums and divides (p. 10, section 0126). The motivation for this is the same as the motivation to combine the inventions given in claim 1, that is to obtain a higher quality, more realistic image.

12. As to claims 12 and 25, Alcorn discloses a system wherein said transform function block executes a blend function (fig. 1, elements 60 and 70; col. 4, lines 48-68;

linear data is combined with the data that has just been converted to linear space, this reads on a blend).

13. As to claim 13, Alcorn discloses a system further including a plurality of first conversion blocks for receiving a plurality of pixel samples and for converting said plurality of pixel samples from gamma space to linear space (fig. 1, multiple degamma correction blocks exist).

14. Claims 3-5, 7-9, 16-18, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alcorn in view of Naegle and further in view of de Haan (U.S. Patent 5,057,919).

15. As to claims 3, 4, 16, and 17, neither Alcorn nor Naegle discloses a system wherein said degamma filter implements a function  $x^{\gamma}$  where  $x$  is the sample value. De Haan, however discloses gamma filters that use this function, culling the result from a lookup table (fig. 2-3; col. 6, lines 20-55). The motivation for the addition of these gamma correction functions is to reduce flickering and produce a more accurate picture (col. 2, lines 1-21). It would have been obvious to one skilled in the art to modify Alcorn in view of Naegle to use an  $x^{\gamma}$  function for correction in order to produce a more accurate picture as taught by de Haan.

16. As to claims 5 and 18, Alcorn discloses wherein the number of bits of output of said degamma filter is greater than the number of bits of input (col. 4, lines 61-65).

17. As to claims 7, 8, 20, and 21, neither Alcorn nor Naegle discloses a system wherein said gamma correction filter implements a function  $x^{(1/\gamma)}$  where  $x$  is the output pixel value. De Haan, however discloses degamma filters that use this function,

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culling the result from a lookup table (fig. 2-3; col. 6, lines 20-55). The motivation for the addition of these degamma correction functions is to reduce flickering and produce a more accurate picture (col. 2, lines 1-21). It would have been obvious to one skilled in the art to modify Alcorn in view of Naegle to use an  $x^{(1/\gamma)}$  function for correction in order to produce a more accurate picture as taught by de Haan.

18. As to claims 9 and 22, Alcorn discloses a system wherein said gamma correction filter provides an output of fewer bits than the input to said gamma correction filter (col. 5, lines 1-7).

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M. Richer whose telephone number is (571) 272-7790. The examiner can normally be reached on weekdays from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMR  
8/22/06



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